

*Soc. 1(2)*: Pt. 6, 34 pls pp 267.

SUBBA RAO, N.V. & A. DEY (1986): Contributions to the knowledge of Indian marine molluscs - 1, Family Mitridae. *Rec. Zool. Surv. India* occ. paper no.

61: 1-48, 3 pls.

SUBRAHMANYAM, T.V., K.R. KARANDIKAR & N.N. MURTI (1952): Marine Gastropoda of Bombay. Pt. 2, *J. Univ. Bombay*. 21(3): 26-72, figs. 187.

### 35. THE GIANT AFRICAN LAND SNAIL *ACHATINA FULICA* BOWDICH IN NEPAL AND BHUTAN

The giant African land snail (*Achatina fulica*) is a serious agrihorticultural pest in most Indo-Pacific islands (Mead 1961, 1979; Raut and Ghose 1984, Raut 1992, Srivastava 1992). Being native to Kenya, East Africa, these snails were available in islands adjacent to East Africa around 1800 AD. W.H. Benson, a conchologist, brought a pair of live adult *A. fulica* specimens from Mauritius and released them in the Chowringhee Garden, Calcutta in 1847. Within a few years, they were common in parts of Bengal and Bihar. They are now very common in most Indian States (Raut and Ghose 1984), Bangladesh, Nepal and Bhutan. The status of *A. fulica* in Bangladesh was reported by Jahan and Raut (1994), but information on these snails from Nepal and Bhutan is wanting. This note is a report on the present status of *A. fulica* in Nepal and Bhutan.

In Nepal, *A. fulica* is common to abundant in almost all possible niches of Birat Nagar, Jaleswar and Birgunge. In Bhutan, Samchi, Phuntsoling and Chirang are infested by these snails. It is said that these snails have invaded these countries from the adjacent snail-infested areas of India and become established over the past 6 to 7 decades.

The snails are nocturnal. They feed on vegetable crops viz. gourd, lettuce, cabbage, bean, etc.; fruit plants viz. papaya and cucumber and ornamentals marigold, chrysanthemum and American life plant. By feeding on these, they damage the crops seriously. Kitchen gardens and flower gardens are seriously threatened. Though the degree of damage is influenced by the snails' density, the seedlings of preferred food-plant species are never spared.

With the onset of monsoon they come out of their hiding places and start breeding. In Nepal and Bhutan, countries, breeding starts by May and continues upto early November. In all these countries, the rate of egg laying is higher during the first three-month period and the population density gradually increases during the last three months of the active period. During September-November they become a serious nuisance and health hazard. They are so numerous that every day a person must collect a few dozen snails from the walls, doors and lawn of his house, so as to keep the premises clean. Besides, it becomes practically impossible to walk on the road or drive a car at night, without crushing the crawling snails. Many of them are found crawling on the water supply or tube-well pipes, or on water tanks, thereby contaminating drinking water.

To date, no effective control measure has been found. Common salt is sometimes applied on the moving snails. Bandicoot rats are seen to feed on these snails, but it is not known whether the rats prefer the snails' flesh or feed on them only under compulsion.

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## REFERENCES

- JAHAN, M.S. & S.K. RAUT (1994): Distribution and food preference of the giant African land snail. *Achatina fulica* Bowdich in Bangladesh. *J. Asiat. Soc. Bangladesh Sci.* 20: 111-115.
- MEAD, A.R. (1961): The giant African snail: A problem in economic malacology. The University of Chicago Press, Chicago. XVII + pp 257.
- MEAD, A.R. (1979): Economic malacology with particular reference to *Achatina fulica*: In: Pulmonates. Vol. 2B. Vera Fretter and J. Peaks (Ed.) Academic Press, London. IX + pp 150.
- RAUT, S.K. (1992): Population dynamics of the pestiferous snail *Achatina fulica* (Gastropoda: Achatinidae). *Malacol. Rev.* 24: 79-106.
- RAUT, S.K. & K.C. GHOSE (1984): Pestiferous land snails of India. Technical Monograph No. 11, Zoological Survey of India, Calcutta. pp 151.
- SRIVASTAVA, P.D. (1992): Problem of land snail pests in agriculture (a study of the giant African snail). Concept Publishing Co., New Delhi, pp 234.

### 36. LECTOTYPIFICATION OF THE HYBRID *ATHYRIUM* x *KERALENSIS* MANICKAM & IRUDAYARAJ (ATHYRIACEAE, PTERIDOPHYTA)

*Athyrium* x *keralensis* Manickam & Irudayaraj (1992) is an interspecific hybrid of *Athyrium puncticaule* T. Moore and *A. solenopteris* (Kunze) T. Moore. It was described as a new hybrid based on a single gathering from Kurusumalai (1000 m), Kerala. A detailed description and illustration have been given by Manickam and Irudayaraj (1992) in their book PTERIDOPHYTE FLORA OF THE WESTERN GHATS, SOUTH INDIA (B.I Publications, New Delhi). Unfortunately it was not typified. Hybrids are largely governed by the same rules as species by ICBN. As per the rules it is lectotyped here. There is a single herbarium sheet which has been entered in the field book of Rapinat Herbarium, Tiruchirappalli (RHT 33588) and preserved in St. Xavier's College (XCH), Palayamkottai. It is selected here as the lectotype of the hybrid.

*Athyrium* x *keralensis* Manickam & Irudayaraj [*Athyrium solenopteris* (Kunze) T. Moore x *A. puncticaule* T. Moore] PTERID. FL. W. GHATS S. INDIA, 238, Pl. 185 (1992).

Lectotype: S. India, Kerala, Kurusumalai (1000 m) Manickam, RHT 33588 (XCH!)

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### 37. *CROTALARIA GOREENSIS* GUILL. & PERR. (LEGUMINOSAE) A NEW RECORD FOR INDIA

(With six text-figures)

While investigating the flora of Dakshina Kannada dist. of Karnataka, I came across an interesting, adventive species of *Crotalaria* near Padubirdi, Udupi Taluka, along roadsides. After a critical study, it was identified as *C. goreensis* Guill. & Perr., a tropical African species. Since

there is no report of the species from India, a brief description and illustrations are provided below.

*Crotalaria goreensis* Guill. & Perr., Fl. Seneg. Tent. 165. 1832; Thulin, Legumi. Ethiopia. - Opera Bot. 68: 162. 1983.